



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,737	07/09/2007	Atsuo Ishizuka	1982-0316PUS1	5298
2292 7590 03/06/2009 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER PERRY, ANTHONY T				
ART UNIT 2879		PAPER NUMBER		
NOTIFICATION DATE 03/06/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/594,737

Applicant(s)

ISHIZUKA ET AL.

Examiner

ANTHONY T. PERRY

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 9/29/06 1/30/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Drawings

The drawings are objected to because Fig. 10B is incorrectly is labeled with “B1”, when it should read --B2--. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the one end" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the other end" in lines 13-14. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the corresponding one ends" in line 27. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the connection region" in line 28. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites "a first electrode group made up of a plurality of electrode patterns" and "a second electrode group made up of a plurality of electrode patterns", and later, for example in lines 15, 18, 21, 23, 24-25, and 26, recites only "the plurality of electrode patterns". It is confusing if "the plurality of electrode patterns" is referring to the electrode patterns of the first or second electrode group. The examiner recommends adding the modifiers, --first-- and --second-- in front of the "plurality of electrode patterns" in claim 1 and claims 2-6, so as to avoid confusion. For examination purposes, the examiner has assumed that "the plurality of electrode patterns" is referring to the electrode patterns of the first electrode group.

Claims 2-17 are rejected under 35 U.S.C. for the same reasons listed above since they are dependent from claim 1.

Regarding claim 2, it is unclear what is meant by "the length of the higher resistance region is reduced with the length of the electrode patterns." For examination purposes, the examiner has assumed that the applicant meant that the electrode patterns longer in length have a resistance region of a shorter length compared to electrode patterns shorter in length.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masataka et al. (JP 10-339880).

Regarding claim 1, Masataka et al. disclose a display apparatus, comprising: a substrate (1); a first electrode group (3) made up of a plurality of electrode patterns (3+20) which are arranged adjacent to one another on the substrate (1), and extend in a first direction; a second electrode group (2) made up of a plurality of electrode patterns (2) which are arranged adjacent to one another on the substrate, and extend in a second direction which is different from the first direction; and a plurality of display elements which are each formed in correspondence to an intersection point of one electrode pattern among the first electrode group and one electrode pattern among the second electrode group, wherein at least the first electrode group includes a plurality of electrode patterns which are each connected to a drive circuit at one end, and are different in length from the one end to the other end, each of the plurality of electrode patterns has a lamination structure which has a first conductor (20) having a first sheet resistivity, and a second conductor (3) having a second sheet resistivity lower than the first sheet resistivity, each of the plurality of electrode patterns is provided with a higher resistance region where the second conductor (3) is removed, and the length of the higher resistance region is changed according to the length of the electrode pattern for each of said plurality of electrode patterns

(for example, see paragraph 0060), wherein, on the substrate, a display region (A) where the plurality of electrode patterns extend in parallel with one another at a first spacing, a terminal region (7) where the one ends of the plurality of electrode patterns in the display region are arranged at a second smaller spacing, and a connection part where the plurality of electrode patterns in the display region (A) are respectively connected to the corresponding one ends in the terminal region (7) are provided (for example, see Figs. 1 and 2).

Masataka et al. teach the second conductor (3) is removed in portions of the electrode patterns in the connection region, but do not specifically teach the second conductor removed at a plurality of places in each of the electrode patterns. It is noted that the applicant's specific feature of the second conductor being removed in a plurality of places of each electrode pattern, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any pattern of the second conductor (removed in one place or a plurality of places) as long as the cumulative area of the second conductor that is removed results in the electrode patterns being uniform is resistance.

Regarding claim 2, Masataka et al. teach the electrode patterns longer in length have a resistance region of a shorter length compared to electrode patterns shorter in length.

Regarding claim 3, Masataka et al. teach the plurality of electrode patterns have substantially the same resistivity value from the one end to the other end (for example, see the abstract and paragraph 0060).

Regarding claim 4, Masataka et al. teach the display apparatus of claim 1, wherein, on the substrate (1), a display region (A) where the plurality of electrode patterns extend in parallel

with one another at a first spacing, a terminal region (7) where the one ends of said plurality of electrode patterns in the display region (A) are arranged at a second smaller spacing, and a connection part where the plurality of electrode patterns in the display region (A) are respectively connected to the corresponding one ends in the terminal region (7) are provided, in the terminal region, in each of the electrode patterns, the second conductor is removed, and the higher resistance region is formed such that it is continued to the terminal region (7) in the connection region (for example, see Fig. 1).

Regarding claim 5, Masataka et al. teach the display apparatus of claim 4, wherein, in the display region (A), the plurality of electrode patterns constituting the first electrode group are repetitively formed in the second direction, among the plurality of electrode patterns, the length of the electrode pattern in the middle is the shortest, and the length of the electrode pattern is symmetrically increased from the electrode pattern in the middle toward both outside directions (for example, see Fig. 1).

Regarding claim 6, Masataka et al. teach the display apparatus of claim 5, wherein, in the connection region, the plurality of electrode patterns extend while maintaining the parallel relationship (for example, see Fig. 1).

Regarding claim 7, Masataka et al. teach the display apparatus of claim 5, wherein the higher resistance region has the greatest length at the electrode pattern in the middle, and the length of the higher resistance region is symmetrically reduced from the electrode pattern in the middle toward both outside directions (for example, see Fig. 1).

Regarding claim 8, Masataka et al. teach the length of the higher resistance region being reduced from the electrode pattern in the middle toward both outside directions, but does not

specifically show the length of the higher resistance region being linearly reduced according to the distance from the electrode pattern in the middle. However, it is noted that the applicant's specific limitation of the relation of the region being linearly reduced, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any relation (linearly, stepwise, etc.) of the reduction of the higher resistance region as long as it is reduced from the center shorter electrode pattern towards both outside directions, such that the relation of the reduction in the higher resistance regions results in the electrode patterns being uniform is resistance.

Regarding claim 9, Masataka et al. show the length of the higher resistance region being stepwise reduced from the electrode pattern in the middle toward both outside directions according to the distance from the electrode pattern in the middle (for example, see Fig. 1).

Regarding claim 10, Masataka et al. teach the first conductor (20) is made up of a transparent oxide electrode material, and the second conductor (3) is made up of a metallic material (for example, see paragraph 0060).

Regarding claim 11, Masataka et al. do not specifically recite the second conductor being laminated on the first conductor. However, it has been held that rearranging of parts of an invention involves only routine skills in the art. Thus, it would have been obvious to one having ordinary skills in the art the time the invention was made to laminate the second conductor on the first conductor or vice versa, since rearrangement of parts of an invention is considered within the skills of the art.

Regarding claim 12, Masataka et al. teach the display apparatus of claim 1, wherein the second conductor (3) is embedded in the first conductor (20) (for example, see paragraph 0059 and Fig. 1).

Regarding claims 13, Masataka et al. teach the display apparatus of claim 1, wherein an electrode pattern in the second electrode group (2) is connected to another drive circuit, and an electrode pattern in the first electrode group (3) forms, with the electrode pattern in the second electrode group (2), a current path for the drive current flowing in a display element which is formed at the intersection point (for example, see Fig. 2).

Regarding claim 14, Masataka et al. disclose the display apparatus of claim 1 being a liquid crystal display apparatus. It is noted that the same technical problem (non-uniform resistance of electrode lines having different lengths), for which Masataka provides a solution, exists in other display apparatuses, including an organic EL display apparatus. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the same configuration taught by Masataka et al. in order to provide a uniform resistance for the electrode patterns in an organic electroluminescent device.

Regarding claim 15, Masataka et al. do not specifically teach the second conductor partially overlapping the first conductor in the direction along the width of the electrode pattern. However, it is noted that the applicant's specific limitation of the second conductor overlapping the first conductor, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any relationship of the second conductor to the first conductor in the width direction (equal widths,

the first conductor overlapping the second conductor, or the second conductor overlapping the first conductor) as long as the two conductors are electrically connected such that the first electrode patterns have a uniform resistance.

Regarding claim 16, Masataka et al. teach the display apparatus of claim 1, wherein the first conductor (20) is laminated on the second conductor (3) (for example, see paragraph 0059 and Fig. 1).

Regarding claim 17, Masataka et al. do not specifically teach the second conductor partially overlapping the first conductor in the direction along the width of the electrode pattern. However, it is noted that the applicant's specific limitation of the second conductor overlapping the first conductor, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any relationship of the second conductor to the first conductor in the width direction (equal widths, the first conductor overlapping the second conductor, or the second conductor overlapping the first conductor) as long as the two conductors are electrically connected such that the first electrode patterns have a uniform resistance.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure includes: Yeo et al. (US 2002/0080317); Suzuki et al. (US 6,184,962); and Hayakawa et al. (US 6,172,732).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is **(571) 272-2459**. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. **The fax phone number for this Group is (571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Anthony Perry/

Anthony Perry
Patent Examiner
Art Unit 2879

/NIMESHKUMAR D. PATEL/
Supervisory Patent Examiner, Art Unit 2879